

## REMARKS

Claim 1 has been amended to include the first and second spacers defined in Claim 2 and the first and second plates defined in Claim 3. This amendment places Claim 1 in condition for allowance.

Claims 2 and 3 have been cancelled as the subject matter of these claims are included in Claim 1.

Claim 4 has been amended to depend upon Claim 1. This claim defines the plates as having laterally spaced holes for the first and second fasteners. The holes predetermine the lateral spacing between the spindles. The spacer plates with laterally spaced holes is not disclosed in the prior art. The allowance of Claim 4 is requested.

Claim 5 has been amended into an independent claim which includes the subject matter of Claims 1 and 2. The circular disks space the knobs and the ends of the spindles from the rails. This amendment places Claim 5 in condition for allowance.

Claims 6, 8 and 9 depend upon Claim 1. These claims define the tight fit engagement of the knobs in the ends of the tubes. Claim 9 includes the circumferential ribs on the convex side walls of the knobs that are located in bias contact with the inside wall of the spindle. The ribs compensate for dimensional tolerances of the inside walls of the spindles and ensure a tight fit engagement between the knobs and the spindles. The allowance of Claims 6, 8 and 9 is requested.

Claim 7 depends upon Claim 6. This claim further defines the inside walls of the spindle as having inwardly directed projections engageable with the knobs to inhibit rotation of the spindles relative to the knobs. The allowance of Claim 7 is requested.

Claims 10 and 11 have been amended to depend on Claim 5. Claim 10 includes the knobs as having annular ribs located in tight friction contact with the inside wall of a spindle.

Claim 11 defines the projections on the inside walls of the spindles and the annular ribs on the knobs. The projections are engageable with the ribs to inhibit rotation of the spindles relative to the knobs. The allowance of Claims 10 and 11 along with Claim 5 is requested.

Claim 12 has been amended to include the first and second spacers comprising first and second plates of Claims 13 and 14 that space the knobs and spindles from the rails. This amendment places Claim 12 in condition for allowance.

Claims 13 and 14 have been cancelled as the subject matter of these claims has been incorporated into Claim 12.

Claim 15 has been amended to depend upon Claim 12. The plates have laterally spaced holes to laterally space adjacent knobs and adjacent spindles. The allowance of Claim 15 is requested.

Claim 16 has been amended into an independent claim containing the subject matter of Claims 12 and 13. The spacer plates of Claim 14 are not included in Claim 16. The spacer disks space the knobs from the rails. The allowance of Claim 16 is requested.

Claims 17 to 22 depend upon Claim 16. Claims 17, 19, 20 and 21 define the tight fit engagement of the ball knobs with the inside walls of the spindles. Claims 20 and 21 include the annular ribs on the ball knobs that are biased into engagement with the inside walls of the spindles.

Claims 18 and 22 define the inside walls of the spindles as having inwardly directed projections engageable with the ball knobs to inhibit rotation of the spindles relative to the knobs.

The allowance of Claims 17 to 23 along with Claim 16 is requested.

Claim 23 has been amended to more particularly define applicant's ball knob combined with a tube. The ball knob has a spherical body with a convex curved side wall. A plurality of

laterally spaced and outwardly directed annular ribs on the side wall are biased into engagement with the inside wall of the tube. The ribs retain the tube on the ball knob. The installation of the tubes on the ball knobs is easy to install as shown in applicant's enclosed Installation Instructions.

Claims 25, 26, 28 and 30 depend on Claim 23. These claims further define the body of the ball knob. Claim 26 defines the body as having flat top and bottom surfaces with the hole extended between these surfaces. The fastener retains the bottom flat surface in surface engagement with the spacer. Claim 30 defines the body as having an outwardly curved annular portion extended downwardly from the top surface to the annular ribs. The allowance of Claims 25, 26, 28 and 30 along with Claim 23 is requested.

Claims 24, 27 and 29 have been cancelled as the subject matter of these claims are incorporated into Claim 23.

Claims 23, 25, 26, 28 and 30 define a combination of a tube and ball knob that is not anticipated or suggested to one skilled in the art by *Roth*. The rail connection shown in Figures 2 and 4 of *Roth* includes a cylindrical block 11 having flat ends with conical recesses 14 to accommodate punched material of square tube 24 to allow the tube to swing around the axis of block 11. The outer surface of member 11 is a continuous cylinder as shown in Figure 2. This cylindrical surface does not have annular ribs that engage the inside wall of member 15 or tube 21. Ribs on the cylindrical surface would inhibit swing of tube 21 about the axis of block 11. The cylindrical surface does not have flat top and bottom surfaces.

The rail connection shown in Figures 5 and 6 of *Roth* includes a connecting bolt 23 of globular form. The blocks 23 and 23a are spherical. These blocks have three dimensional outer surfaces in which all points on the surface are equidistant from the center points of the blocks. The sphere does not have flat top and bottom surfaces. The block 23 does not have annular side ribs and flat top and bottom surfaces. Block 23 is retained in tube 22 by impinching the end of

tube around block 23. This allows block 23 to rotate and angularly move relative to tube 22. Ribs on block 23 would inhibit the movement of the block 23. Figure 6 shows globular block 23a with recesses 14a on opposite sides of the block. A recess is an indentation or small hollow. The recess 14 is described as conical in Figure 4. The outer surfaces of block 23a around the recess is circular. There are no annular ribs that extend circumferentially around the convex curved side wall of block 23a. The block 23a does not have flat top and bottom surfaces. There is no teaching in *Roth* of a ball knob having a convex curved side wall with continuous annular ribs located in biased engagement with the inside wall of a tube to retain the tube on the ball knob as defined in Claim 23. It is submitted that the combination defined in Claim 23 is patentable over the *Roth* rail connection.

*Hannum* in U.S. Patent No. 4,645,598 discloses plastic parts. None of the parts are plastic ball knobs. Claims 25 and 32 are retained in view of the disclosure of the metal globular blocks 23 and 23a. Applicant's plastic ball knobs with plastic ribs allows the ribs to deform into a tight fit with the inside walls of the tubes. The ribs are seals that prevent moisture and dirt from entering the inside spaces of the tubes. Applicant requests that the teaching of the rail connections be reconsidered as applied to the claims as amended.

Claim 31 has been amended to define applicant's ball knob for anchoring a tube having an inside wall to a support. The knob has a spherical body with an annular convex curved side wall with a plurality of laterally spaced and outwardly extended continuous annular ribs adapted to be located in biasing engagement with the inside wall of the tube.

The rail connection disclosed by *Roth* does not have a spherical body with an annular convex curved side wall with a plurality of continuous annular ribs located in biasing engagement with the inside wall of a tube. The rail connection shown in Figure 6 has a globular block 23a with two recesses 14a. A center punch is used to press opposite portions of the rod

22a into the recesses. There is no disclosure that the recesses are annular or extend around block 23a. The rod 23a is firmly secured to block 23a. *Page 2, lines 28-35.* The block 23a does not rotate relative to tube 22a due to the punched tube portions in the recesses and crimped upper ends of the tube. This rail connection does not anticipate the ball knob defined in Claim 31 or suggest to a person skilled in the art the claimed spherical body with a convex curved side wall having a plurality of outwardly extended annular ribs. The allowance of Claim 31 is requested.

Claims 32, 33, 34, 35 and 38 depend upon Claim 31. These claims more particularly define the shape of the body including a flat circular top surface and a flat circular bottom surface. It is noted that the block 11 shown in Figures 2 and 4 is a cylindrical block with conical recesses 14 at its opposite ends as shown in Figure 4. *Page 1, lines 62-67.* Block 11 is not a spherical body with flat top and bottom surfaces. The allowance of Claims 32 to 35 and 38 with Claim 31 is requested.

Claim 40 defines applicant's ball knob as having a spherical body with generally flat bottom surfaces adapted to be located in surface engagement with a support. The body also has a continuous annular convex curved side wall adapted to be located in tight frictional engagement with the inside wall of the tube. A hole extends through the body between the top and bottom surfaces for accommodating a fastener to secure the knob to the support and retain the bottom surface in surface engagement with the support.

The globular connection blocks shown in Figures 5 and 6 of *Roth* do not have flat bottom surfaces. All outside surfaces of these blocks are convex curved. Block 11 shown in Figures 2 and 4 have cylindrical surfaces with flat ends with recesses for punched portions of the tube. As shown in Figure 2, bolt 12 holds a cylindrical block 11 on a rail 18. The top of block 11 shown in Figure 4 is a line of a cylindrical surface. The *Roth* rail connections do not anticipate the ball knob of Claim 40 or suggest to one skilled in the art the claimed ball knob. The allowance of

Claim 40 is requested.

Claims 41 and 42 depend upon Claim 40. These claims include the annular ribs on the convex curved side wall of the body adapted to engage the inside wall of the tube. Annular ribs on the blocks 23 and 23a of *Roth* are not disclosed. The allowance of Claims 41 and 42 along with Claim 40 is requested.

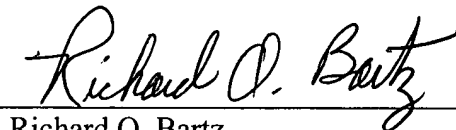
Applicant's rail system is a commercial product. Enclosed are applicant's business brochure and Installation Instructions showing the railing disclosed and claimed in the application. The commercial utilization of the invention is a favorable factor regarding patentability of the railing.

In view of the above remarks applicant requests the allowance of Claims 1, 4, 5 to 12, 15 to 23, 25, 26, 28, 30 to 35, 38 and 40 to 42.

Respectfully submitted,

WILLARD J. HARDER

By

A handwritten signature in cursive script, reading "Richard O. Bartz", written over a horizontal line.

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on July 30, 2004,  
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